

REMARKS

With entry of the foregoing amendment, Claims 2-9 and 11-32 are now in the application. Claims 1 and 10 were canceled in a previous amendment.

Claims 2, 3, 4, 5, 9, 11, 14, 15 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus (U.S. Patent 6,510,322) in view of Sayers et al (U.S. Patent 6,539,237). Claims 6 and 7 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al. and Malackowski et al. (U.S. Patent 6,411,803). Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al. and Hjelm et al. (U.S. Patent 6,529,497). Claim 12 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al. and Fenton et al. (U.S. Patent 5,619,555). Claim 13 was rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al. and Amin (U.S. Patent 6,167,261).

The Applicant believes, however, that these rejections should be withdrawn for the following reasons.

1. Sayers et al. must be disqualified as a prior art reference based on 35 U.S.C. 103(c) because the present Application and Sayers et al. were both owned by JetCell, Inc. when the present Application was filed

The accompanying Statement of Common Ownership provides adequate evidence according to MPEP 706.02(1)(2) and 706.02(1)(3) of the fact that the present Application and the Sayers et al. patent both were owned by JetCell, Inc. when the present Application was filed on February 14, 2000.

Because the Sayers et al. patent was filed on November 9, 1998, the contents of the Sayers et al. patent were not published until the Sayers et al. patent issued on March 25, 2003.

Thus, the Sayers et al. reference only qualifies as prior art under 35 U.S.C. 102(e), and under no other section of Title 35 of the United States Code.

However, since the present Application was filed after November 29, 1999 by a common assignee, the Sayers et al. patent cannot be used in an obviousness rejection under 35 U.S.C.

103(a). Sayers et al. must therefore be disqualified as a prior art reference. See MPEP 706.02(l)(1).

Without the Sayers et al. reference, the Examiner has failed to establish a prima facie case of obviousness because Schulte-Kellinghaus does not teach all the elements of the present invention.

Thus, it is respectfully submitted that the rejection of Claims 2, 3, 4, 5, 9, 11, 14, 15 under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al. should be withdrawn because Sayers et al. must be disqualified as a reference based on 35 U.S.C. 103(c).

Because Claims 6-8, 12, and 13 depend on and are limited by amended Claim 11 either directly or indirectly, the Applicant respectfully submits that the rejection of Claims 6-8, 12, and 13 should be withdrawn for the same reasons as stated above.

New Claim 17 is a computer product style claim that corresponds to the features of allowable Claim 11. It should therefore be in a condition for allowance.

New Claim 18 is an apparatus claim of the Mobile Switching Center in Fig. 2 that also corresponds to the features of allowable Claim 11. It should be allowable.

New Claim 19 is a system claim that corresponds to the features of allowable Claim 11. It should also be allowable.

New Claims 20-32 are dependent directly or indirectly from allowable Claim 19. These Claims also correspond, more or less, to the features set forth in the dependent Claims 2-9 and 12-16. These claims should therefore be allowable.

The amendments to Claims 11, 12, 14, 15, and 16 are at least supported at Page 10, Line 16 of the original application.

2. Even if Sayers et al. is available as prior art, the claims are still patentable

The Applicant provides the following alternative argument to overcome the Examiner's rejections if the Sayers et al. patent is available as a prior art reference.

While the Applicant responds to the Examiner's comments within the Final Office Action mailed on October 14, 2003 ("Final Office Action"), a more detailed description of the Sayers et

al. reference and new arguments are provided to clarify the Applicant's position regarding patentability of Claims 2-9 and 11-32.

The present invention relates to a wireless communications system, and more particularly, to a method of reserving a portion of the system's shared resources (i.e., one or more interface channels) for a user to ensure network access at a subsequent reservation time and location. The channel reservation and allocation process are illustrated in Fig. 2 of the patent application as originally filed and described in detail within the Remarks section of the Applicant's prior Amendment.

In the present invention, it is particularly important to observe that the reservation record is first stored in a Home Location Register (HLR) as part of a subscriber's International Mobile Subscriber Identification (IMSI) record according to Step 110 of Fig. 2. "Upon the occurrence of an appropriate event," the MSC validates the reservation record (See Application Page 9, Line 11). This can include events such as a location update, mobile station registration, or an autonomous delivery of a reservation record to the Mobile Switching Center (MSC)/ Visitor Location Register (VLR). The validated reservation record is then automatically transferred and stored in a Visitor Location Register (VLR), according to Step 120, to enable the MSC and Base Station Subsystem (BSS) to hold channels at an appointed time-of-day (TOD) and date (See Step 130) for the subscriber.

It is believed that the Applicant's novel approach of using a reservation agent to store a reservation record within a subscriber's IMSI record within an HLR, leverages an existing cellular network messaging architecture to enable the reservation of channel resources within a wireless network (such as a GSM network), while minimizing any changes that may be required within the MSC and BSS.

In the context of certain claims of the present invention, the MSC checks the contents of the reservation record to determine whether the user is authorized to make a reservation at a particular location, billing rate, or based on some other criteria. This validation step within Claim 11 is an authorization process that occurs independent of any authentication process such as GSM challenge-response authentication. If the authorization is successful, a validated reservation record is then stored within the VLR (See Claim 11).

Using reservation agent 50, the present invention allows for reservations to be made in numerous ways, “such as through a conference calling center, by entering the information on the mobile handset, through an operator-assisted manual service provided by a cellular carrier, an Internet or Web-based form, or e-mail submission service” (See Application Page 4, Lines 15-18).

The Schulte-Kellinghaus patent describes a system in which a reservation request may be made to indicate to a switching center 10 that a specific subscriber wants to reserve communication channel capacity in a cellular network. As observed by the Examiner, the subscriber may submit a request to reserve a communication bandwidth at a particular time, T_{request} (See Fig. 7 and Col. 8, Line 40). A switching center 10 then either rejects or confirms the request. If confirmed, the requested communication capacity is then reserved for the pre-specified time beginning at a start time t_s and ending at an end time t_e for a time interval, T_{service} .

As stated in the Applicant’s prior response, Schulte-Kellinghaus only suggests that the switching center 10 must initiate a request for reservation at the particular base station which is to service the call. There is no further explanation, suggestion, or teaching in the Schulte-Kellinghaus patent of the actual messages and/or other events which occur between the switching center 10 and the various other elements of the wireless system in order to actually set up the reservation.

Schulte-Kellinghaus also describes a request checking means which may include “the authorization of a subscriber” (col. 3, lines 34-35). The checking means may validate a request based on a subscriber’s “priority” such as roaming status of a subscriber (col.9, lines 15-20), status as an emergency or medical subscriber (col. 9, lines 22-24), or existing GSM access classes (col. 9, lines 26-29). For instance, the MSC may query a VLR to determine whether a subscriber is a roamer. But, as the Examiner correctly concludes, the MSC in Schulte-Kellinghaus apparently does not store a validated resource reservation record within the VLR.

The Sayers et al. patent admittedly does describe the general purpose of an HLR and VLR in a GSM network. For example, Sayers et al. describes that the HLR may store both “static” and “dynamic” data related to a subscriber. Static data includes items such as the IMSI, subscriber (MSISDN) number and registered supplementary services. Dynamic data is described as including the current location of the mobile subscriber and call forwarding numbers.

Furthermore, Sayers et al. states that the HLR may download required data to a VLR database when a mobile station registers in a VLR area, but at no other times (col. 5, lines 1-12).

Sayers et al. also describes the GSM challenge-response authentication process “based upon a secret key (k_i)” that is used by “the VLR for verifying the validity of the users subscription” (col. 5, 23-31).

Sayers et al. further discloses Supplementary Services that “are intended to enhance the functionality” of basic GSM services (col. 6, lines 26-27). While conferencing services are not explicitly described in Sayers et al., the European Telecommunications Standards Institute (ETSI) ETS 300 164 *Integrated Services Digital Network (ISDN); Meet-Me Conference (MMC) Supplementary Service Description* defines conferencing as a service that “enables a user to arrange for a call between more than two participants.” Furthermore, Section 6.1 of ETS 300 164 states that “MMC supplementary service shall be generally available without any prior arrangement with the service provider.” Like a traditional conference call, all MMC participants are assigned a common conference call access number that must be dialed to participate in the conference call. MMC provides additional features, unique to GSM networks, such as in-band notification of the conference call start and termination. But even this reference to MMC and other related GSM conferencing features does not enable or suggest the reservation of radio access channels in advance of a call.

Turning attention to the Examiner’s rejection of Claim 11 in particular, according to the Examiner:

Sayers et al. “discloses a method that includes storing, in an HLR, all of the both static and dynamic data related to the subscriber, the static data includes...supplementary services which would include the conferencing services” (Final Office Action Page 3, Lines 1-4).

Although Sayers et al. does not explicitly refer to conferencing services, the Applicant agrees with the Examiner that a GSM conferencing service can be implied from Sayers et al. However, merely providing GSM conferencing services such as MMC does not suggest or teach the handling of data associated with reservations, in particular, how to ensure that necessary

bandwidth is available at the time of a reservation which is the exact problem sought to be solved by the present invention.

According to the Examiner, Sayers et al. also discloses “downloading all required data to the VLR database when a mobile station registers in the VLR area” (Final Office Action Page 3, Lines 6-7). As explained above, Sayers et al. merely refers to “all” required data for a GSM conferencing call and does not suggest or teach the handling of data associated with making a reservation for bandwidth in advance.

Furthermore, the present invention also allows for autonomous delivery of a reservation record to the Mobile Switching Center (MSC) and VLR, separate from a registration process, and prior to the mobile station entering the area covered by the VLR. No such features are taught in the prior art.

The Examiner has also stated that:

“storing the reservation in a home location register...would clearly facilitate faster access to the data by removing the need for data exchange between the switching center and the HLR” (Final Office Action Page 3, Lines 8-10).

The Examiner appears to have a misconception of the meaning of the HLR. The HLR is not only a physical entity such as database, but also a logical entity within a GSM or ANSI-41 cellular telephone network. Thus, data will always be exchanged between the HLR and switching center, i.e., MSC, regardless of the physical location of the HLR. The HLR may be physically integrated into a MSC. The HLR may interface with many MSCs and be physically separated from all MSCs. One MSC may also interface with many HLRs, i.e., implemented as a distributed database (See Application Page 7, Lines 11-12). This obviously refutes the Examiner’s suggested motivation that storing the reservation record in a HLR eliminates the need to exchange data between the HLR and switching center to “facilitate faster access.” Speed of access to data is not the problem. Ensuring that radio access channels are reserved for use at the time of the reservation is the problem.

By storing the reservation record in the HLR, the present invention solves this problem by taking advantage of the fact that the MSC will always exchange data with the HLR because the HLR may distribute the reservation record to VLRs using existing network messaging.

Also, according to the Examiner:

“One of ordinary skill in the art would have been motivated” to store the reservation record in the HLR “to prevent unauthorized users from accessing private data from the HLR or VLR” (Final Office Action Page 3, Lines 13-14).

But, as explained above, the HLR may be physically distributed throughout various geographic locations. Again, this obviously refutes the Examiner’s suggested motivation that storing the reservation record within the HLR is somehow more secure. Furthermore, even if the HLR were integrated within the MSC, such a configuration may not prevent unauthorized users from accessing private data such as a reservation record if the MSC is not adequately protected.

The Examiner also argued that Sayers et al. “discloses authentication services for authenticating all user subscriptions” (Final Office Action Page 3, Lines 4-5). Unfortunately, the Examiner has confused the meanings of Authentication and Authorization. Claim 11 recites an Authorization process to validate a reservation record prior to delivery to the VLR. Claim 11 is not referring to an Authentication process, and especially not to a GSM challenge-response authentication process referred to by the Examiner at col. 5, lines 23-25 of Sayers et al. And, while the Schulte-Kellinghaus patent does disclose using authorization as a request checking means, it does not disclose or suggest storing a validated reservation record in a VLR or anywhere else.

In particular, one element of Claim 11 states “validating the reservation record for access if the user is authorized.” The meaning of this authorization element is described within the patent application at Page 9, Lines 15-20 as follows:

“The MSC 42 will then perform a validation on the user. To validate the user’s access, the MSC 42 will check the contents of the reservation record 60 such as the location, billing rates and other information needed to validate that the user of the mobile station 20 is permitted to make a call. The validated reservation record 62, having a validation bit now set, is stored in a visitor location register (VLR) 46 associated with the cell site 24 in which the mobile station 20 is located.”(Emphasis Added)

The corresponding element of Claim 11 is referring to a validation step that is part of an authorization process, not an authentication process. Access control is an aspect of information security that includes the processes of: 1) identification, 2) authentication, 3) authorization, and 4) accountability.

Authentication is the process of verifying the identity of an entity that requests access to a network resource. For example, an Automated Teller Machine (ATM) user is authenticated by entering a Personal Identification Number (PIN) to access the user's bank account and withdraw money. In a Global System for Mobile (GSM) network, the SIM within a mobile station performs cryptographic challenge-response authentication to verify the identity of the subscriber.

Authorization is the process of validating or verifying that the entity can access certain resources (usually after being authenticated) based on a rules set or criteria defined by the system providing access. For example, once the ATM user obtains access to the bank's network, the bank may check an authorization database to validate the resources available to user. Certain users may be allowed to withdraw up to \$500 dollars while other users may have a \$1000 dollar limit. An administrator may have access to everyone's account, while a particular user may only be authorized to access their individual account.

Thus, the GSM authentication process, as described in Sayers et al., is not an authorization process as described above and as set forth in Claim 11.

The Examiner also stated that:

"implementation of the invention on an already existing mobile network by providing all of the necessary data to the VLR...would in turn make the invention more marketable"
(Final Office Action Page 3, Lines 15-16).

The Examiner appears to be suggesting that a novel improvement, such as the present invention, which makes a product more marketable, somehow destroys patentability. The Examiner has misunderstood the law, perhaps. To the contrary, commercial success is a consideration, given equal weight as other factors such as motivation or teaching to combine, indicating that an invention is actually patentable. *Graham v. John Deere Co.*, 383 U.S. 1 (1966); *Gambro Lundia AB v. Baxter Healthcare Corp.*, 42 USPQ2d 1378 (Fed. Cir. 1997).

Based on the foregoing arguments, neither reference teaches, even in their combination,

that the reservation request may be stored in the HLR, transferred to a VLR, and stored as a validated reservation record in the VLR, as claimed.

Furthermore, there is no motivation to combine the references. There is, for example, no suggestion in Schulte-Kellinghaus to use the HLR and VLR to distribute and store a validated reservation record, especially with Schulte-Kellinghaus' prior art understanding of the HLR and VLR of a GSM network. There is also no suggestion in Sayers et al., which only provides a general description of a GSM system, to use supplementary services to reserve a shared communication resource.

Thus, it is respectfully submitted that the rejection of amended Claim 11 under 35 U.S.C. 103(a) as being unpatentable over Schulte-Kellinghaus in view of Sayers et al., should be withdrawn.

Because Claims 2-9 and 12-16 are dependent on and limited by Claim 11 either directly or indirectly, the Applicant respectfully submits that the rejection of Claims 2-9 and 12-16 be withdrawn for the same reasons as stated above.

New Claim 17 is a computer product style claim that corresponds to the features of allowable Claim 11. It should therefore be in a condition for allowance.

New Claim 18 is an apparatus claim of the Mobile Switching Center in Fig. 2 that also corresponds to the features of allowable Claim 11. It should be allowable.

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The amendments to Claims 11, 12, 14, 15, and 16 are at least supported at Page 10, Line 16 of the original application.

CONCLUSION

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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By 

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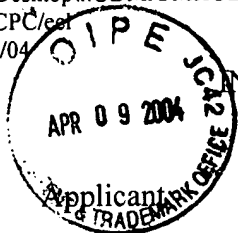
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In accordance with MPEP 706.02(1)(2) and MPEP 706.02(1)(3), the Applicant provides the following Statement of Common Ownership:

The above-referenced U.S. Patent Application 09/504,325 and U.S. Patent 6,539,237 were, at the time the invention of U.S. Patent Application 09/504,325 was made, owned by the same company, JetCell, Inc., a corporation of Delaware. The attached Exhibits A and B are copies, respectively, of the original assignment of ownership for U.S. Application 09/504,325 and U.S. Application 09/188,856 which has now issued as U.S. Patent 6,539,237.

The ownership of both U.S. Patent Application 09/504,325 and U.S. Patent 6,539,237 were subsequently transferred to Cisco Systems, Inc. on May 1, 2000 when JetCell, Inc. merged with Cisco Systems, Inc. That assignment was recorded on February 28, 2001 at Reel/Frame 011584/0419.

Respectfully submitted,

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